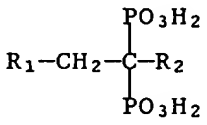
4-16180/-/CIP

Novel substituted alkanediphosphonic acids

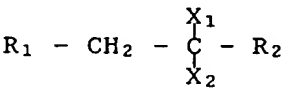
Abstract of the Disclosure

Alkanediphosphonic acids, in particular heteroarylalkanediphosphonic acids of formula



(I),

wherein R_1 is a 5-membered heteroaryl radical which may be fused with benzene or cyclohexene nuclei and which contains, as hetero atoms, 2 to 4 N-atoms or 1 or 2 N-atoms as well as 1 O- or S-atom, and which is unsubstituted or C-substituted by lower alkyl, phenyl or phenyl which is substituted by lower alkyl, lower alkoxy and/or halogen, or by lower alkoxy, hydroxy, di-lower alkylamino, lower alkylthio and/or halogen, and/or is N-substituted at a N-atom which is capable of substitution by lower alkyl, lower alkoxy and/or halogen, and R_2 is hydrogen, hydroxy, amino, lower alkylthio or halogen, and salts thereof, have regulatory action on calcium metabolism and can be used as medicaments for the treatment of diseases associated with impairment of calcium metabolism. The compounds are obtained for example by converting, in a compound of formula



(II),

wherein X_1 is a functionally modified phosphono group and X_2 is a free or functionally modified phosphono group, X_1 and, if appropriate X_2, into the free phosphono group.

This is a continuation-in-part of application Serial No. 120,284 filed on November 13, 1987.